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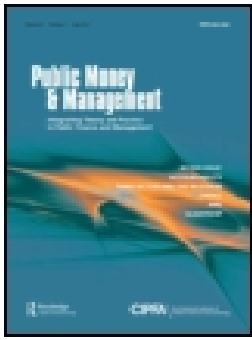
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Designing learning success and avoiding learning failure through learning analytics: the case of policing in England and Wales

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IMPACT

How to effectively develop a framework of learning and development is a central challenge for contemporary organizations. New technologies and educational partnerships have transformed the ways in which professionals learn. This article explains how learning analytics can be used to design blended learning programmes and support learners in an evidence-informed way, so that learning 'failures' (withdrawal, underperformance and complaints) can be avoided. The article draws on several case studies, including the current learning and development challenges faced by police organizations in England and Wales, that support the case for learning analytics to achieve success in workforce training.

ABSTRACT

In an increasingly digital and globalized world, there is growing pressure on higher education institutions and organizations in both the public and private sectors to provide learning and professional development that can be delivered and supported online. This article explores the potential of learning analytics as an evidence-informed strategy to minimize learning failures in professional learning. Using policing in England and Wales as a case study for discussion, the article identifies how learning analytics can be used to design effective learning programmes based on the preferences and engagement of professional learners; track user experience and learning performance; and facilitate a tailored approach to learning tuition and support. The article makes a broad contribution to both contemporary academic debates related to police reform and professional development, as well as broader perspectives related to learning technologies and analytics.

KEYWORDS

Higher education; learning analytics; learning technology; policing; professional development; student support

Introduction

In recent years there have been considerable advances in the online/blended learning education sector (for example Bond et al., 2019; Rienties & Toetenel, 2016). This is evidenced in the growth of the part-time higher education market, made up of self-funded, as well as sponsored learners, from public and private organizations (Department of Business Innovation and Science, 2015). This growth in online/blended learning has been further fuelled by the impact of Covid 19 as the traditionally campus-based higher education institutions and organizations sought ways to deliver learning in a risk-free environment. However, online/blended learning, which we conceptualize here as online learning that includes tutor support either in person or online, comes with its challenges. It can be expensive and time-consuming to produce; it requires the development of learner digital literacies; it requires a long-term commitment and discipline from learners to combine full-time work and private lives with study and, with this, it attracts learners with a wide range of learning support needs (Nguyen et al., 2020; Richardson et al., 2020). However, these are challenges that can be overcome. In this article, through the showcase of learning analytics, we explore how online/blended learning can be designed and learners supported in a way that is informed by learner data, so that support interventions and learning design decisions can be introduced before learning 'failures' occur. These 'failures'

include poor learner performance; learner dropout; and complaints.

To explore the potential of learning analytics for professional learning, we use the example in this article of policing in England and Wales. Some adverse experiences of standardized e-learning packages in recent decades have left police organizations cautious of online/blended learning (Campeau, 2019; Hadlington et al., 2018; Honess, 2020; McGinley et al., 2019), despite the strategic aims of the profession to be more digitally underpinned (National Police Chiefs Council, 2016). However, a new era of police education and higher education partnerships has emerged—one that has the potential to radically transform police digital learning capacity and capabilities. Online/blended learning partnerships provide an opportunity to the police to develop data-informed learning that minimizes the risk of learning failure within their workforce. In this article we explore how the use of learning analytics in police education offers the potential to design effective learning programmes based on the preferences of professional learners; track user experience and learning performance; and facilitate a tailored approach to learning tuition and support. Although we use the police as a case study for the article, the arguments and evidence we put forward have relevance to public and private organizations engaged with, or contemplating, professional development through online/blended learning.

The contemporary police learning context

Policing in England and Wales is in a period of transformative change. The social context in which policing takes place has shifted, with new online and digital crimes, and cross-border criminality and terrorism requiring a more sophisticated and complex police response (Hough et al., 2018; Neyroud, 2011). As a result, Policing Vision 2025 sets out a transformative change agenda that equips police organizations with a workforce that is representative, agile, resilient and equipped with the skills to respond to new challenges (Association of Police and Crime Commissioners, 2020). Two dominant priorities within this future policing vision are the need to develop the digital capabilities of police organizations and the need for a standardized education framework to recognize the skills and competencies of officers across the police rank structure.

Until recently, police officers' training and education was delivered regionally by the 43 police forces in England and Wales. Known as the Initial Police Learning and Development Programme (IPLDP), this programme was at Level 3 of the National Qualifications Framework (NQF) and was delivered predominately in a classroom setting by local police trainers and field mentors (Bryant et al., 2013; McGinley et al., 2019). However, following a review of police leadership and training (Neyroud, 2011), a new professionalization agenda in policing was developed, leading to the establishment of a police professional body, the College of Policing, in 2012 (Holdaway, 2017). The college has three complementary functions—knowledge, education and standards—and aims to provide consistent practice and standards across the 43 police forces in order to achieve professional parity between the police and other professions.

A central contribution of the college has been the introduction of the Police Education and Qualifications Framework (PEQF), which outlines a formal agenda for police education, training and professional accreditation (College of Policing, 2020). The framework is being rolled out in several stages, with stage one focusing on the education requirements for entry into policing nationally. Most notably, the PEQF uplifts police training from level 3 to level 6 of the NQF—creating the need for graduate level education. To achieve this, police forces are required to form collaborative partnerships with higher education intuitions (HEIs) to deliver police training and development in partnership at degree level. These HEI/police partnerships were developed following an extensive multi-million public sector procurement exercise. Programmes were then co-designed and co-delivered informed by a detailed National Curriculum of Learning Outcomes compiled and regularly updated by the College of Policing. Despite this, individual HEI/police partnerships have the autonomy to design and deliver their professional programmes of learning in a way that is mutually agreeable.

The ways through which these new programmes are delivered varies across the sector. Some police forces have partnered with campus-based HEIs requiring police learners to attend face-to-face learning activities; others have chosen a HEI partner with online/blended learning expertise and capabilities (Hough et al., 2018). Anecdotal evidence suggests that there has been some trepidation among forces when considering a more online/blended

approach to these new policing qualifications. This is likely to be due to the historical use of e-learning within policing. The National Centre for Applied Learning Technologies was set up to assist the 43 police forces in England and Wales and the wider policing community in adopting alternative learning methodologies. However, it has not been well received by the police workforce, with claims that it is outdated, didactic, non-engaging and demotivating. It is now claimed to be ineffective for police learning (Hadlington et al., 2018; Honess, 2020).

Despite this tarnished reputation of e-learning in policing, two recent Home Office funded projects have argued for the renewed use of blended/online learning approaches in the delivery of the new PEQF. The first (Hough et al., 2018; Hough & Stanko, 2019) calls for the shift away from traditional class-room-based models of police training in favour of more diverse, interactive and engaging learning environments facilitated by technology. However, they stress the importance of upskilled and motivated police trainers and tutors to ensure the successful implementation of this approach. The second project (Martin et al., 2019) highlights how digital technologies have altered the way in which people learn—arguing that new recruits will be joining the police with skills and expectations around digital learning. However, their research identified that technology in police learning—in terms of infrastructure and capabilities—is underdeveloped and is not viewed positively or as innovative due to their previous adverse experiences with didactic e-learning packages. Despite these challenges, the project advocates the increased use of digital learning in policing due to the learning and operational flexibility, in addition to the facilitated collaboration with HEIs that it can provide. Importantly, for the context of this article, they also highlight the opportunities that building systems that can monitor and capture digital learning.

Combining online/blended learning with policing: the potential of learning analytics

Although there is some supportive evidence of potential blended/online learning options for effective policing, there seems to be a paucity of evidence-based research specifically focused on the policing context (Bryant et al., 2013; Holdaway, 2017; Honess, 2020). For example, a recent systematic literature review of police recruit training programmes in England and Wales by Belur et al. (2019) initially identified 109 studies on police recruit training. Only 13 studies were identified to have a strong methodological design. The review indicated that typically two types of learning and training mechanisms were used in police training, namely problem-based learning (PBL) and andragogy (adult learning) (Belur et al., 2019). Several studies indicated the importance of reflection while practising, and integrating theory with practice. However, there was no explicit mention of technology, blended or online learning mechanisms. In fact, most identified training programmes were face-to-face or work-based designs (Belur et al., 2019), which seems surprising for a survey carried out in 2019.

In this article we provide some potential markers of how some elements of blended and online learning could be integrated in police training, and what the potential

affordances and limitations of technology and online learning in particular might be for police training. We appreciate that most of the approaches described below were tested and implemented in other professional contexts and adult learning settings, and in line with Belur et al. (2019) there is a strong need to contextualize these findings in a policing context.

In the past 20 years, enormous progress has been made in terms of introducing technology in education, and the training in particular (Arbaugh, 2014; Bond et al., 2019). For example, in a review of 50 years of educational technology in the *British Journal of Educational Technology*, Bond et al. (2019) found a strong evolution of technology in and outside the classroom, and increased uptake of educational technology in adult and professional learning settings. Furthermore, with the rise in the use of technology inside and outside the classroom, a parallel development in the past 10–15 years of increased data availability has emerged.

One particular research stream that capitalizes on this is learning analytics. As argued by Siemens and Long (2011), learning analytics is ‘the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs’. There are various ways to use data to enhance learning and teaching and, particularly in a policing context, there is both an increased availability of data during police training through developing police/HEI partnerships, as well as an increased need for police officers to be able to effectively use data.

For example, these data are not just useful for instructional designers and teachers (i.e. police training designers, coaches, and mentors) to know which learners might need more support or attention, but also may be useful to critically reflect on whether the design of a particular learning environment is fit for purpose (Mangaroska & Giannakos, 2019; Rienties & Toetenel, 2016; Viberg et al., 2018). This article focuses on three affordances that we think might be particularly useful for the police context: designing police effective learning programmes based on the evolving preferences of professional learners; tracking user experience and learning performance; and facilitating a tailored approach to learning tuition and support.

Designing police effective learning programmes based on the preferences of professional learners

Interlinked with the rise of learning analytics, in the past decade there has been a growing body of literature that seeks to develop a descriptive framework of instructional practices so that effective teaching approaches can be shared between educators and reused (Conole, 2012; Mangaroska & Giannakos, 2019). This would be particularly useful in a policing context where various training centres are providing semi-standardized training (Bryant et al., 2013; Honess, 2020; Hough & Stanko, 2019), while at the same time Belur et al. (2019) found substantial differences in both the conceptualization, delivery, and evaluation of policing training across England and Wales. Outside the policing context, several educational initiatives have been undertaken to gain better insights and understanding into how teachers design and implement face-to-face blended and online courses, and what works. These initiatives have focused on what has been called ‘learning design’, and

include the Open University’s Learning Design Initiative (OULDI: Conole, 2012; Rienties & Toetenel, 2016).

OULDI is ‘a methodology for enabling teachers/designers to make more informed decisions in how they go about designing learning activities and interventions, which is pedagogically informed and makes effective use of appropriate resources and technologies’ (Conole, 2012). In plain English, learning design is focused on ‘what learners do’ as part of their learning and professional development, rather than on ‘what teachers do’, or on what will be taught. This concept could also be very useful in the policing context, given that most police training is either focused on PBL or andragogy (Belur et al., 2019).

As highlighted earlier, recent technological developments have allowed researchers and practitioners to capture the digital traces of the learning activities of police trainees and instructors in both blended and online environments. These rich and fine-grained data about actual police trainee behaviours offer educators and senior management potentially valuable insights into how police trainees react to different elements within a range of different police training programmes. For example, in a longitudinal study linking the learning design decisions of 74 modules with weekly behaviour by 72,377 learners at the OU, Nguyen et al. (2017) found that 69% of the weekly engagement by learners was predictable by how teachers designed respective learning activities. For example, when teachers included a communication activity about non-violent communication in week 6 (for example a learner-to-learner discussion activity to help learners to engage in a non-violent communication style), this led to more engagement than asking learners to read and reflect about a non-violent communication task. The fact that learning design has so much impact on learner behaviour is a tremendously important finding, as it highlights that teachers and instructional designers in particular have a substantial role in designing appropriate learning activities for respective groups of learners.

While learning design is definitely important, how teachers implement such learning designs may substantially impact the eventual learning outcomes. For example, in a large quasi-experimental design exploring a new teaching innovation in the British Army, Berry et al. (2020) explored whether a present–act–reflect (PAR) approach could encourage more self-reflection and critical thinking among 134 recruits relative to 177 recruits who were trained in the traditional model. In contrast to expectations, recruits in the experimental condition did not significantly increase their self-reflection and critical thinking skills in a pre/post test design. Qualitative follow-up interviews indicated that many PAR trained instructors mostly referred back to their traditional teaching style (Berry et al., 2020).

This aligns with findings from a large-scale longitudinal study by Ebert-May et al. (2011), who observed 77 teachers engaging within a professional development programme for a year, examining their classroom teaching in practice at various points in time. This research evidenced that, although the teachers reported that professional development supported them in understanding the benefits of constructivist and student-centred forms of teaching, their teaching practice remained the same. In Belgium similar findings were reported with 1,000 higher education students, Stes et al. (2010) found that teachers’

inherent beliefs, culture, and daily practice might not change even though they were trained about student-centred methodologies. In other words, changing teaching approaches of instructors is inherently difficult (Arbaugh, 2014; Ebert-May et al., 2011), and may need substantial incubation time, as well as senior management support (Rienties et al., 2016).

One potential reason why innovations in more active teaching approaches seem to fail in terms of impact on learners is the lack of good data to show to teachers whether (or not) an innovation is working (on a near to real-time basis). As evidenced by a range of large-scale reviews most teachers are making design decisions based upon disciplinary tradition (for example Ebert-May et al., 2011; Nguyen et al., 2017; Rienties & Toetenel, 2016), or feedback from student evaluation data. However, several big data studies have shown that these student evaluation data are often unreliable (Rienties & Toetenel, 2016). Perhaps more importantly, relying on student evaluation data is always too late to make meaningful interventions because the course will have finished. In line with a range of large-scale implementations of predictive learning analytics at the OU, when teachers are provided with accurate and timely data they are able to make more informed decisions how to design their courses to meet the requirements of their learners and, where necessary, adjust their designs (Herodotou et al., 2020; Rienties & Toetenel, 2016).

With learning analytics, teachers can be given close to real-time feedback about how a particular learning design is working for a group of learners. For example, Rienties et al. (2016) introduced an Analytics4Action approach among 10 teams of teachers, whereby teachers of respective modules were introduced to various sources of learners' data (for example attendance data, learning design, library access, predictive learning analytics data, virtual learning environment access) from various stakeholders at the OU during interactive discussion sessions. Based on these data, teachers critically reflected whether their learning design was working for particular groups of learners, and whether intervention was needed or a course redesign.

Tracking user experience and learning performance

With the opportunity to collect data on what, where, and how learners are engaging with learning activities, there is an obvious affordance to build learning analytics dashboards for teachers and/or learners. In other contexts within the police, some forces have started to use predictive analytics. Fitzpatrick et al. (2019) provide some useful early definitions and conceptualizations of how predictive analytics might work for crime prevention—in particular when using real-time dashboards.

In the related field of learning analytics, several systematic literature reviews on learning analytics dashboards (Bodily et al., 2018; Jivet et al., 2018) have reported on the affordances and limitations of such dashboards, whereby there are now over 50 studies that have technically implemented such learning analytic dashboards. Furthermore, a range of studies has shown that a combination of behavioural data (for example click stream, learning activity engagement, time on task), in combination with cognitive data (for example mastery of task X,

successful completion of assessment item Y), can predict learning outcomes (Kuzilek et al., 2015; Tempelaar et al., 2015). This means that there are now several technological solutions available that accurately identify learners that are potentially at risk, and learners who need more encouragement and/or support.

However, most of the studies identified by systematic reviews (Bodily et al., 2018; Jivet et al., 2018; Viberg et al., 2018) were either experimental design studies (mainly focused on the technological rather than pedagogical implications), and/or had been implemented on a small scale (for example one course unit or a module). A notable exception was the large-scale implementation of predictive learning analytics at the OU (Herodotou et al., 2017). In a large application of predictive learning analytics data, 1,159 used a programme called 'OU Analyse' in 231 courses and Herodotou et al. (2020) found substantial differences in uptake. Only a third of teachers who had access to the dashboards made frequent, active use of them. However, the teachers who actively used learning analytics had better retention rates and were able to intervene more effectively than the teachers who relied on offline indicators and experience (Herodotou et al., 2020).

In OU Analyse (Herodotou et al., 2017; Kuzilek et al., 2015), teachers can see how many learners are still registered in a course, how many learners are active at each stage of learning, and how many learners submit their formative assessment. More specifically, teachers can look at each learner's progress and, using a traffic light system, can review which learners are predicted to do well on the next assignment, which learners might need some help, and which learners are predicted not to pass the next assignment. Examples of the OU Analyse dashboard can be provided by the authors on request.

Facilitating a tailored approach to learning tuition and support

With options to be able to identify which learner might be on track for study success, and which learner might need some additional encouragement, or whether or not a learner should continue with a course, a promising emerging field of learning analytics is an opportunity to provide a tailored approach to tuition and support. Sometimes this is referred to as 'personalized learning' (de Quincey et al., 2019; FitzGerald et al., 2018), whereby the materials and learning activities are adjusted based upon the needs, interests and ability of respective learners.

In both artificial intelligence (Holmes et al., 2019), as well as computer-based assessments (de Quincey et al., 2019), there is now a wealth of experience on developing smart, intelligent tutor systems to help to reach the potential of each learner by adaptive learning paths and feedback. This personalization and adaptation could be very useful for police training, rather than the one-size-fits-all approach used widely at present (Littlejohn & Margaryan, 2014; Belur et al., 2019). One-size-fits-all training might be too fast-paced and difficult for some learners, while for others there may be limited new insights, or even repetition and boredom. With adaptive learning systems, each learner could theoretically be provided with an individualized learning path tailored exactly to their learning needs. If these learning tasks were automatically checked by learning

analytics applications, police trainees could practice, in their own time and at their own pace, the skills, knowledge, and competences until they successfully master them.

Although it is technically feasible to accurately 'identify' which learners might need more or less support, and there are some excellent examples of good practice (Bodily et al., 2018; de Quincey et al., 2019; Viberg et al., 2018), there are obviously several large organizational (Dawson et al., 2018; Sclater, 2017), ethical (Drachsler & Greller, 2016; Prinsloo & Slade, 2017), and pedagogical hurdles (Rienties et al., 2019; Tempelaar et al., 2017) that need to be overcome before the police can start to consider implementing learning analytics.

First, in order to provide appropriate recommendations to learners one has to assume that most relevant learning activities are measured and accurately indicative of affect, behaviour and cognition of learners. In particular, in face-to-face and blended learning contexts, where the majority of learning might occur in and around the classroom (Arbaugh, 2014), it may be practically difficult to measure all learners' engagement. Obviously organizations could start to develop proxies of engagement, such as tracking attendance (Sclater, 2017), analysing social network posts (Saqr et al., 2018), or even measuring engagement with smart cameras in lecture rooms. However, this requires a substantial investment in both infrastructure, governance, and data analytics (Dawson et al., 2018; Sclater, 2017). Furthermore, as evident in several large-scale implementation studies at the OU, there is also a strong need for organizations to invest in the professional development of their staff (Herodotou et al., 2020; Rienties & Toetenel, 2016), as data literacy, computer skills, and analytical processing of complex data require substantial upskilling. These extensive and cost-laden requirements could be barriers to police forces employing learning analytics. However, police-HEI partnerships through the PEQF offer opportunities for the police because learning analytics will be provided by HEIs, and the HEIs will develop police staff and trainers as part of upskilling initiatives in preparation for the co-delivery of degree level education.

Second, in terms of the ethics of gathering, using, and acting upon learning analytics data, a balance needs to be struck between organizations and teachers getting to know each respective learner, and the right of these individuals for privacy (Drachsler & Greller, 2016; Prinsloo & Slade, 2017). With an increasing availability of data and subsequent variables being collected in organizations, there is a risk that (semi-) sensitive and private data about a learner might become available to others, which could lead to substantial infringements. In particular when building 'recommendation systems', where learners get personalized recommendations about what to do next, based on data from earlier students, there seems to be desire to collect as much as data as possible, and worry about any potential issues afterwards.

It is important to remember that even though a particular variable, for example Black Minority Ethnic (BME), might be predictive for a particular assessment or module, this does not automatically imply that all BME learners in that respective module are necessarily at risk, or warrant any intervention (Nguyen et al., 2020). In particular, in the police force, where appropriate representation from different BME

groups is a priority, profiling of specific groups of learners based upon certain characteristics might be potentially troublesome.

Furthermore, even though that variable might be predictive in that module, it may not be predictive in follow-up learning activities, so why would organizations to track such data? For example, in a large learning analytics study by Nguyen et al. (2020) of 149,672 OU learners enrolled in 401 modules, results indicated that Black learners were significantly less likely to complete, pass, or achieve an excellent grade compared to Asian or White learners. Furthermore, by linking time spent on tasks, Nguyen et al. (2020) found that Black learners spent 12% more time studying than White learners for the same academic performance. In other words, encouraging Black learners to work harder based upon some generic learning analytics proxy might be counter-productive, as some groups of Black learners were already spending more time on task than other learners.

This is not to say that learning analytics cannot support the learning needs of individuals from minority social groups that are being actively recruited into policing. Yet, as argued by a recent review of social class, gender, and ethnicity by Richardson et al. (2020), often there is an intersectionality between such variables, so just relying on one proxy might over- or underestimate a particular concern. Furthermore, many recent large-scale predictive learning analytics studies suggest that behavioural and cognitive proxies of engagement and learning are much more predictive and important for learning success than certain demographic or social characteristics of learners (Saqr et al., 2018; Tempelaar et al., 2015).

In terms of pedagogical hurdles, as highlighted by a range of studies at Maastricht University among thousands of business learners, how to effectively provide feedback is strongly dependent on individual learning dispositions (for example emotion, meta-cognition, motivation, self-efficacy, self-regulation) of learners (Rienties et al., 2019; Tempelaar et al., 2017). For example, learners who have strong self-regulated skills who might just be a bit behind on a task in week 4 will probably be able to catch up without a strong warning or alert from a teacher, even though that a learning analytics system might flag this group of learners. In fact a strong message from a teacher might negatively impact these types of learners in terms of self-esteem and intrinsic motivation (Rienties et al., 2019). Alternatively, a learner with relatively low self-regulation and strong anxiety who seems to be on track until week 4 based upon the completed learning activities might actually need some supportive messages from a teacher, even though this learner is technically not at risk at this point in time (Rienties et al., 2019; Tempelaar et al., 2017). One approach that is currently being explored on a relatively large scale is to give learners access to their own data, and allowing learners to play with their own behaviour, cognitive, and learning disposition data to better understand how their own affect, behaviour, and cognition could be effectively supported (Rienties et al., 2019).

Discussion and ways forward

In this article we have argued that a data informed approach to professional learning through the use of learning analytics

(Siemens & Long, 2011; Viberg et al., 2018) may offer the potential to minimize learning failure on several levels. Given the context of this *Public Money & Management* theme, we have tailored our discussion to apply to the current context of police learning and development across England and Wales, but our recommendations have relevance to a broad range of professional learning contexts globally.

Policing in England and Wales is currently undergoing radical transformation—as it moves from being an artisan trade to a graduate ‘profession’ (Holdaway, 2017; McGinley et al., 2019). Fueled by the introduction of the PEDF (College of Policing, 2020), police organizations are in the process of forming collaborative partnerships with HEIs to deliver the required degree level professional learning. These police/HEI partnerships vary in their size and learning delivery model, but where an online/blended learning approach is pursued, opportunities emerge to benefit from data generated from learner interactions with the virtual learning environment to better understand their learner experience and to minimize the risk of them failing and withdrawing from their programme—representing a lost resource to both the police organization that employed them, the university and the public. Thus, to improve the learner experience and minimize learning failure risks in the context, we have outlined three potential data informed approaches that could be considered.

First, learning analytics allow for an evidence-informed approach to programme design (Mangaroska & Giannakos, 2019; Nguyen et al., 2017). They offer the potential to assess police learner engagement with different learning tools, and to assess whether they have been effective in facilitating officers to meet the learning outcomes of their professional programme. Problematic or ineffective learning tools, for example, can be identified by looking at the data produced across and between cohorts, highlighting where updates and revisions are needed (de Quincey et al., 2019; Nguyen et al., 2017). Similarly, learning tools that are effective for police learners can be identified by learner engagement and performance data and further rolled out across the programme. Further, this approach allows for evaluation of learning material that is produced and delivered by multiple stakeholders (for example although a big part of the PEQF curriculum will be designed and delivered by the HEI, some will be designed, or co-designed, by the police) to assess its effectiveness and identify any areas that need further development. In a context where learning outcomes are dictated by a professional body (for example the College of Policing), such data can also be used to assess the efficacy of this core curriculum. The ability to assess HEI/police partnerships and learning delivery collaborations in this way can help facilitate the step up to the degree level, thereby minimizing the risk of partnership failure. This approach is contrasted with traditional face-to-face models of delivery which rely on end of module/programme learner evaluations and tutor reflections to inform the evolution and continuous improvement of learning delivery and design.

Second, learning analytics can be used to profile the engagement of police learners with their programme of learning. Drawing upon a range of behavioural data indicators, officers can be classified according to their risk

of disengagement, withdrawal, or misuse of learning time assigned to them or, alternatively, to spot early talent and excellence. Similarly, analytics can be used to track the study duration and engagement of officers with learning materials at a granular level (for example how long they dedicated to each activity; completion of formative tasks), thereby overcoming the cultural resistance that the police are likely to experience towards online learning due to the unsupervised time it potentially provides to learner officers within the context of quite a formal, highly supervised and hierarchical organization (Goode & Lumsden, 2018). That being said, this potential will only be realized if both HEI and police staff can use learning analytic dashboards effectively to inform learner interaction and interventions (Dawson et al., 2018; Herodotou et al., 2020). Similarly, this potential can only be realized if there is an interconnectivity between police and HEI systems and data-sharing platforms that allows the analytics data and dashboards to be accessed by both parties. This can be a major hurdle for existing police systems infrastructure, but will improve as police forces become digitally underpinned organizations (National Police Chiefs Council, 2016).

Third, learning analytics can be used to identify officers that are at risk of learning failure, thereby triggering appropriate and tailored tutor interventions. This can be monitored at quite a granular level (for example week by week), avoiding having to wait until a learner is assessed to determine whether they have passed or failed. This offers potential for police learners who will be dispersed across their vast police organizations for the majority of their learning programmes and will thus have limited face-to-face encounters with their learning instructors. Tutor interventions may come from their university tutor or workplace police trainer/mentor, whichever is appropriate. In contrast, learning analytics can also be used to identify high-performing officers—allowing for identification of where additional learning and/or tutor engagement is required in order to keep the officer engaged with their learning programme. Looking into the future, the analytics generated throughout an officer’s initial programme of study can also be used to predict and recommend future learning pathways based on their learning preferences and performance, such as specialist and/or promotion pathways.

While recognizing the potential affordances of learning analytics for police training, obviously there are several major hurdles and challenges that need to be appropriately identified, mapped, and addressed in order to effectively use data to empower learning. Beyond that, police training is tightly regulated with strict requirements around data security and sharing, one obvious concern for both HEIs and other organizations is whether IT systems are sufficiently accessible and coherent in terms of data gathering. Furthermore, as highlighted by several studies on the ethics of predictive analytics (Fitzpatrick et al., 2019; Sclater, 2017), being able to identify certain groups of learners who may be potentially at risk requires a careful and appropriate support and governance structure to prevent a further reconfirmation of any pre-existing social and economic factors that might negatively impact a diverse and talented police training programme. Finally, in the context of policing, the strong culture of police organizations and its role in resisting change historically cannot be ignored (Campeau, 2019; Loftus, 2010). What is

proposed represents a major shift in the way in which learning is conceptualized, designed and delivered in policing, involving stakeholders from across the organization and introducing a new third party (HEIs). This needs to be carefully planned and incorporated into the cross-organizational change projects that frame the implementation of the PEQF if the benefits proposed in this article are to be realized. Yet, as this article has demonstrated, designing professional learning in evidence-informed way through learning analytics data offers several organizational benefits—most notably the avoidance of learning failures—that provide a rational and motivation to create an organizational climate where learning analytics can be embedded into future police learning and development activities.

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